

STATE

OF

TENNESSEE

(Rev. 12-18-95)

January 1, 2021

SPECIAL PROVISION

REGARDING

TEMPORARY TRAFFIC CONTROL (SIGNALIZATION)

Delete **Subsection 730.01** of the Standard Specifications and substitute the following:

730.01 - Description of Work - This work shall consist of furnishing, erecting, and maintaining all signalization equipment and materials installed in accordance with the provisions of the current edition of the "Manual for Uniform Traffic Control Devices for Streets and Highways", Federal Highway Administration, and these Specifications, or as specified by the plans or directed by the Engineer for the purpose of safely directing traffic through construction zones.

Material and equipment, while not required to be new, shall nevertheless, be in good condition and ready for use. If the Contractor elects to use a traffic signal controller that is not new, certification shall be submitted that the equipment has been tested to the original manufacturers' specifications and is in good working condition, and that all applicable NEMA environmental standards are met.

All equipment necessary for the satisfactory performance of this work shall be on hand and approved before the work will be permitted to begin. All construction requirements for this work shall be as prescribed in **Section 712 - Temporary Traffic Control**.

Delete **Subsection 730.03** of the Standard Specifications and substitute the following:

730.03-Submittal Data Requirements - Within 30 days after the issuance of the work order, the Contractor shall submit to the Engineer and to the Division of Materials and Tests one collated set of the manufacturer's descriptive literature and technical data which fully describes the types of signal equipment he proposes to use. A copy of the transmittal letter for this submittal shall be provided to the Engineer. Descriptive literature shall include the manufacturer, models, etc. and be adequate to determine if the equipment or material meets the requirements of the Plans and specifications. These sets of submittal data shall include a list of the materials submitted along with descriptive material for, but not limited to, the following items:

Controller
Cabinet and Exhaust Fan
Detectors
Signal Heads including Lamp Information and Mounting Hardware
Loop Wire and Loop Sealant
Shielded Detector Cable
Signal Cable
Cable for Span Wire, Guys, etc.
Pull Boxes
Conduit
Coordination Equipment
Wood Poles

In addition to the above, the Contractor shall submit to the Engineer a notarized letter certifying that all traffic signal materials listed in the submittal are in conformance with the Plans and Specifications.

If the signal equipment has been approved previously by the Department, a certified letter referencing the Contract and a statement confirming that the equipment has been tested in accordance with **Section 730.01**, may be submitted in lieu of the two (2) sets of the manufacturers descriptive material described above. The submittal sets shall also include detailed scale drawings of any non-standard or special equipment and of any proposed deviation from the Plans. If requested to do so, the contractor shall submit for approval sample articles of any materials proposed for use. The Department will not be liable for any materials purchased, labor performed, or delay to the work prior to such approval.

Add the following after the fifth paragraph of **Subsection 730.24**:

If polycarbonate signal heads are provided, they shall be the same in appearance as metal signals except the lenses, housings, doors and visors shall be molded of polycarbonate resin and shall withstand 70 ft-lb impact without fracture or permanent deformation. The color of the signal shall be Federal yellow and shall be homogenous throughout. Reflectors shall be "ALZAK" process coated aluminum or approved equal material and shall conform to the latest revised specifications of the ITE Technical Report No. 1.

Delete 6 (K.) under Controller Cabinets in **Subsection 730.25** and substitute the following:

- K. All cabinet housing solid-state controllers shall be supplied with a signal conflict monitor which meets the NEMA standards. The signal conflict monitor (SCM) shall be wired to sample the following cabinet functions:
 - 1. Each phase Red/Yellow/Green/Walk display.
 - 2. Controller plus 24 volt output.

3. Controller Voltage Monitor function.

The following conditions shall be sensed by the monitor and the SCM shall place the cabinet in the Flash Mode:

1. Absence of an active AC input on a channel.
2. Green/Yellow both active on a channel.
3. Yellow/Red both active on a channel.
4. Green/Green active on conflicting channels.
5. Green/Walk active on conflicting channels.
6. Green/Yellow active on conflicting channels.
7. Absence of the 24 VDC required to operate the load switches.
8. Controller Voltage Monitor circuit indicates a controller malfunction.
9. Defeatable per channel operation that times the Phase Yellow Clearance interval. If the Phase Yellow Clearance is less than 3.0 seconds, the intersection shall be placed in the FLASH mode.

The SCM shall be wired in the cabinet in such a manner that the cabinet will provide ONLY FLASH operation if the SCM is not properly mounted.

The SCM shall be provided with front panel indicators to display the following:

1. AC power is active.
2. Channel active indicators.
3. Failed status.
 - a. Plus 24 VDC I.
 - b. Plus 24 VDC II.
 - c. Conflict.
 - d. Controller Voltage Monitor.
 - e. Absence of Signal.
 - f. Power Failure after conflict.

The SCM shall have a defeatable "Start in Flash Period" which shall be user adjustable over the range of 4-10 seconds. This circuitry shall guarantee a minimum flash operation period of the intersection when power is applied to the monitor.

The monitor shall be provided with a front-panel reset switch and power fuse.

The type of monitor required shall be as specified previously, but in no case will a cabinet be acceptable which has phase red/yellow/green/ or walk displays which are not monitored by the SCM.

The signal monitor sampling inputs shall be terminated at the point in the cabinet which is closest to the field termination point.

Add the following after the fourth paragraph of **Subsection 730.29**:

Microwave Vehicle Detector

Microwave vehicle detectors shall be self-contained units capable of emitting a low power microwave beam over one or more lanes of traffic. The microwave vehicle detector shall have the following requirements:

1. Shall have directional detection capability with a detection range of 5 to 50 meters (16 to 160 feet) measured from the detector over the approach traffic lane.
2. Shall have pan and tilt adjustability.
3. Shall have a detection delay of a minimum of one third of a second before an output is generated.
4. Shall be housed in an aluminum enclosure.